NOAA Teacher at Sea
Mike Laird
Onboard NOAA Ship RAINIER
July 24 - August 13, 2005

Log 9

Day 10: Wednesday, August 3

Time: 13:00
Latitude: 56° 00.3' N
Longitude: 158° 45.7' W
Visibility: 10 nautical miles (nm)
Wind Direction: Light Airs
Wind Speed: Light Airs
Sea Wave Height: 0'
Swell Wave Height: 0'
Sea Water Temperature: 12.2° C
Sea Level Pressure: 1005.0 mb
Cloud Cover: Sky 1/8 covered; Lower level: Cumulus
Mid Level: Altocumulus

Science and Technology Log

<u>Deck Crew for a Day – Part II</u>

Previously in this log (see Day 10: Tuesday, August 2) I left you having just assisted the deck crew (of which I am a member for a day) in getting the survey launches prepped, lowered to the water, and cast off for their day of echo sounding. All that done, and the day is just beginning.

As it turns out, the deck crew is currently running through some training exercises for some of its newer members – a perfect opportunity for me to learn a lot of new and interesting things. However before the training begins, the junior deck hands have daily cleaning responsibilities (bathrooms, trash, mopping floors, etc.) that must be taken care of. Somehow I luck out and avoid latrine duty, and Erick Davis, my mentor for the day, takes me to the bow of the ship where I am instructed on the operation of the forward cranes. These cranes are used primarily for lifting and moving the gangways (the walkways between the ship and the pier when the ship is in port) and to load stores and cargo onto the ship.

After an introduction to the crane and the hand signals used to communicate between the operator and the deck chief, I have a chance to operate the crane for a few minutes. By this time, the rest of the group has rejoined us and the focus turns to proper mooring and anchoring techniques.

Members of the deck crew are responsible for getting the mooring lines ashore as the ship is arriving in port and retrieving and storing the lines when the ship is putting out to sea. The RAINIER most often uses four lines (each line is assigned a number) when mooring: a bowline (line #1), an aft leading spring line (line #2), a for leading spring line (line #3), and a stern line (line #4). The sequence in which these lines are cast ashore is intended to increase the ease of docking the ship and is dependant on the docking situation.

In a routine mooring the lines will be cast in the following order: 1) aft leading spring line, 2) stern line, 3) bowline, and 4) for leading stern line. There are aids both mechanical (capstans) and fixed on the deck (chucks and bits) that help as crew members release and take in line as the ship is being positioned alongside the pier or preparing to leave port. These aids have taken the place of hand cranking and reduce the amount of physical effort required to manipulate mooring lines that can get quite heavy when dealing with extensive lengths (especially when wet) of line.

In addition to mooring, the deck crew is highly involved in anchoring the ship. Once a location (chosen by the commanding officer or in some instances the officer of the deck) has been chosen to anchor, the crew prepares to drop anchor. The flow of the anchor chain when releasing and retracting the anchor is controlled by a piece of equipment called the anchor windlass. When setting anchor, the windlass must allow chain to flow smoothly as it follows the anchor to the seafloor.

The windlass has a three-tiered system used to hold the chain in place while the ship is in transit and when anchored. First, there is a huge drum brake (much like those found on cars, but much larger); there is also a large metal latch, called the “devil’s claw” that fits through, grabs, and holds onto a chain link; finally the “cat’s paw” is a metal arm that lays on top of the chain pinching it down to prevent movement. Each of these must be disengaged to allow release of chain. As the chain is being released, the deck chief signals to the bridge how much chain has been let out. The chain length is measured in units called shots. Each shot is ninety feet (the RAINIER carries twelve shots of chain for each of its two anchors – 1080feet of chain per anchor) and is indicated by a section of painted chain four or five links long.

Once the anchor hits bottom, additional chain (called scope) is released to allow for fluctuations in water level caused by the tide and wave action. The additional chain also provides additional weight to help secure the ship. The amount of scope depends on the conditions and judgment of the officer in charge, but a general rule is to let out a total chain length of one third (distance to the bottom) plus two thirds (length of scope). For example, if the anchor hits bottom at 27 fathoms (a fathom is six feet; 27 fathoms equals 162 feet) three hundred twenty-four more feet (or about three and one half shots) of chain would be released for scope.

Having completed the tutorial on anchoring, we turned to another aspect of the life of a deck crewmember -- the operation of the small boats (launches and skiffs) on board ship. The remainder of the afternoon is spent practicing the operation and maneuvering of a

skiff. The group I am with practices basic operations: starting, stopping, smooth acceleration and deceleration, and moving in a straight line while in reverse.

Having demonstrated these skills, we go to man overboard rescue situations and practice moving the skiff into proper rescue position alongside the victim (without running them over).

Then it's on to anchoring the skiff: choosing an acceptable location and orientation, releasing the anchor and proper amount of scope, and making sure the anchor is set to keep the skiff safely and securely positioned.

The last maneuver we practice is beach landings: choosing a location onshore that will allow personnel and equipment to move from the boat to land safely and efficiently, properly orienting the skiff for beach approach, and finally the smooth, spot-on landing.

Finally, it's back to the RAINIER to await the return of the launches, so they can be raised by the davits back into their storage hangars. Thus ends my day with the deck crew.

Personal Log

While on a skiff doing shoreline work, I saw some sea lions yesterday. Until we came along, they were peacefully napping on a rock outcrop enjoying the late morning sunshine. Our arrival caused a ruckus with a great amount of bellowing, grunting, and tussling among themselves. Ensign Briana Welton was telling us about an article she read saying that human intrusion into breeding sea lion communities causes the sea lions stress and has interfered with their reproductive habits causing a population decline in some areas. Our presence certainly caused this bunch a bit of stress if their behavior was any indication. They were fun to watch (make sure to be up wind – they have a terrible stench), but I hope we did not overly stress them.